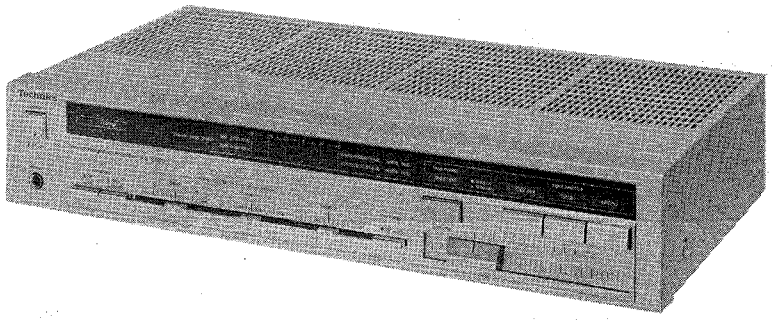
ORDER NO. HAD8506108C3

Service Manual

Stereo Integrated Amplifier

Amplifier

SU-Z550



Color

(S) . . . Silver Type
(K) . . . Black Type

Color	Area
(S)(K)	[XA] . . . Asia, Africa. Latin America, Middle Near East and Oceania
	[XL] . . . Australia

Please use this manual together with the service manual for Model No. SU-Z550, Order No. HAD85042524C1.

SPECIFICATIONS

(DIN 45 500)

■ AMPLIFIER SECTION

40 Hz~20 kHz continuous power output
both channels driven 2 × 50W (8Ω)
1 kHz continuous power output
both channels driven 2 × 60W (8Ω)
Total harmonic distortion
rated power at 1 kHz 0.009% (8Ω)
rated power at 40 Hz~20 kHz 0.05% (8Ω)
half power at 1 kHz 0.007% (8Ω)
Intermodulation distortion
rated power at 60 Hz: 7 kHz=4:1, SMPTE, 8Ω 0.03%
Power bandwidth
both channels driven, −3 dB 10 Hz~25 kHz (8Ω, 0.03%)
Damping factor 40 (8Ω)
Input sensitivity and impedance
PHONO 2.5 mV/47kΩ
TUNER, CD/AUX, TAPE/EXT 150 mV/22kΩ
PHONO maximum input voltage (1 kHz, RMS) 150 mV

S/N
rated power (8Ω)
PHONO 73 dB (IHF, A: 72 dB)
TUNER, CD/AUX, TAPE/EXT 90 dB (IHF, A: 97 dB)
Frequency response
PHONO RIAA standard curve ±0.8 dB (30 Hz~15 kHz)
TUNER, CD/AUX, TAPE/EXT 10 Hz~90 kHz (−3 dB)
Tone controls
bass 50 Hz, +10 dB~−10 dB
treble 20 kHz, +10 dB~−10 dB
Loudness control (volume at −30 dB) 50 Hz, +9 dB
Output voltage
TAPE/EXT (REC OUT) 150 mV
Channel balance, CD/AUX 250 Hz~6,300 Hz ±1.0 dB
Channel separation, CD/AUX 1 kHz 55 dB

Headphones output level and impedance 490 mV/330Ω
Load impedance
MAIN or REMOTE 4Ω~16Ω

■ GENERAL

Power consumption 290W
Power supply
For Australia AC 50 Hz/60 Hz, 240 V
For others AC 50 Hz/60 Hz, 110 V/127 V/220 V/240 V
Dimensions (W×H×D) 430 × 86 × 240 mm (16-15/16" × 3-3/8" × 9-7/16")
Weight 4.8 kg (10.6 lb.)

Note:
- Total harmonic distortion is measured by the digital spectrum analyzer (H.P. 3045 system).

Specifications are subject to change without notice for further improvement.

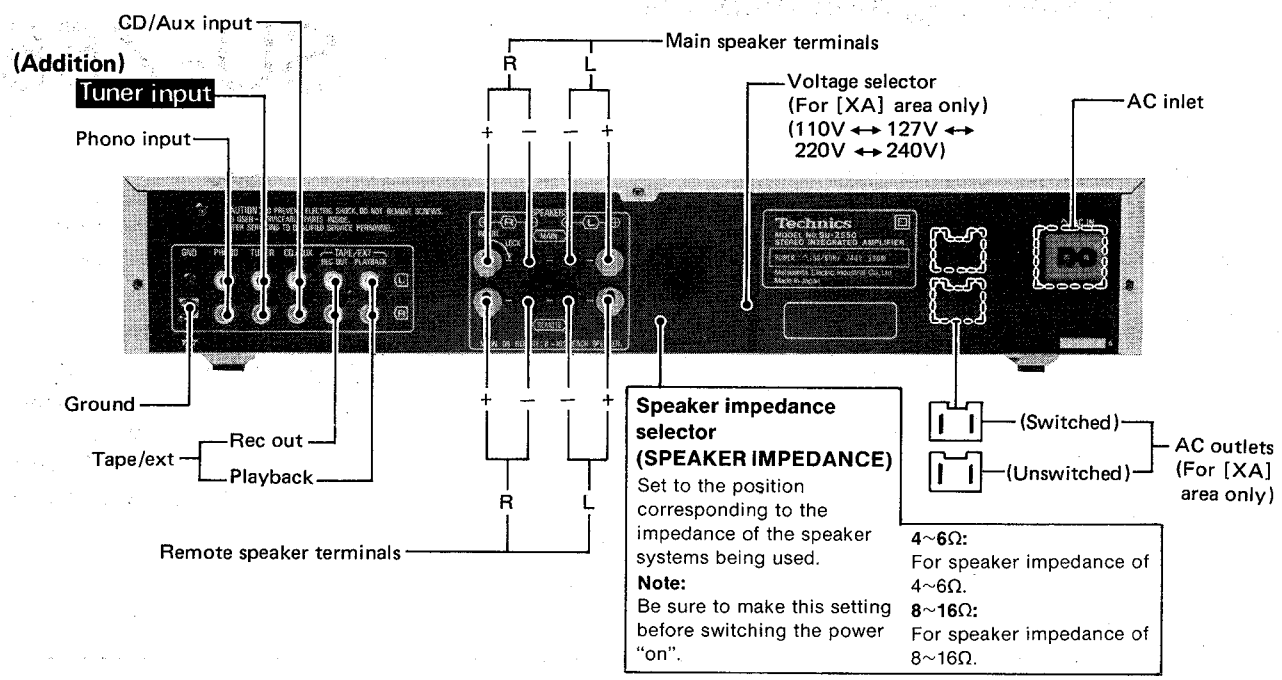
Technics

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

CHANGE

- For the Front panel control, performance and rating, it is the same as for SU-Z550 [M].
- The tuner connection of SU-Z550 [M] is of socket type, while SU-Z550 [XA/XL] used PIN terminals.

■ REAR PANEL



■ REPLACEMENT PARTS LIST

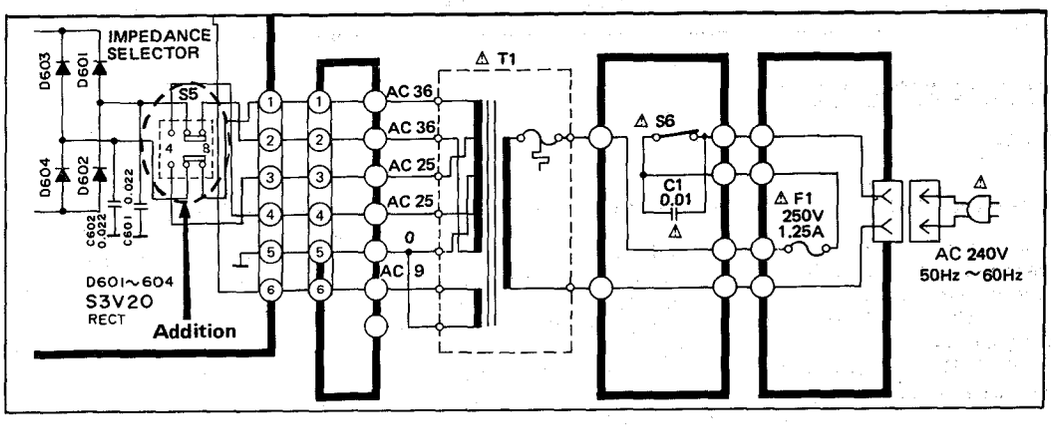
Ref. No.	Change of Parts No. SU–Z550(K) [M]	Color Area	SU–Z550(S/K) [XL, XA]	Part Name & Description
INTEGRATED CIRCUIT				
IC401	SVI3004		SVI3003	Integrated Circuit
DIODES				
D501	MA165		MA4120M	Diode
D502	Addition		MA4120M	Diode
TRANSFORMER				
T1 ⚠	SLT5M445	[XL]	SLT5M441	Power Source
		[XA]	SLT5M442	
FUSES				
F1 ⚠	XBA1F30NU14		XBA2C12TR0	Fuse, 250V, T1.25A
F2 ⚠	Addition	[XA]	XBA2C25TR0	Fuse, 250V, T2A
SWITCHES				
S5	Addition		SSS164	Tap
S7 ⚠	Addition	[XA]	ESE37263	Voltage Selector
CABINET and CHASSIS PARTS				
1	SGYUZ550–KM	O	SGYUZ550–SL	Front Panel Ass'y
		Ⓚ	SGYUZ550–KL	
1–1	SDU272I		SDU272N	Filter
3	SGXUZ150–KE	O	SGXUZ150–SE	Ornament Ass'y
		Ⓚ	SGXUZ150–KE	
9	SHR9764–3	O	SHR9764–2	Slider
		Ⓚ	SHR9764–3	
10	SHR5299–6	O	SHR5299–5	Volume Cover
		Ⓚ	SHR5299–6	
16	SKC1550BB1	O	SKC1550S1	Cabinet
		Ⓚ	SKC1550BB1	
21 ⚠	SJS305	[XL]	SJS305	Socket
		[XA]	Deretion	—
22	SJS9231B	[XL]	SJS9234B	Socket, AC Inlet
		[XA]	SJS9231B	
23	SJT389		SJT388	Fuse Holder
24	SJS9231A	[XL]	SJS9234A	Cover, AC Inlet
		[XA]	SJS9231A	

Ref. No.	Change of Parts No. SU–Z550(K) [M]	Color Area	SU–Z550(S/K) [XL, XA]	Part Name & Description
25	SGP6590–4A	[XL]	SGP6590–8A	Rear Panel
		[XA]	SGP6590–9A	
27	SJF3062–5N		SJF3062–1N	Terminal Board
32 ⚠	SJS9232B	[XL]	Deretion	—
		[XA]	SJS9232B	Socket, AC Outlet
33	SJS9232A	[XL]	Deretion	—
		[XA]	SJS9232A	Cover, AC Outlet
34	SGE1763		Deretion	—
35	SWKUZ550–KM		Deretion	—
SCREWS				
N6	SNE2095–5	O	SNE2095–4	Cabinet
		Ⓚ	SNE2095–5	
ACCESSORIES				
A1 ⚠	SJA170		SJA173	AC Cord
			SJA168	
A2 ⚠	Addition		SJP9215	Plug
PACKING PARTS				
P2	SPS4606–2	[XL]	SPS4089–1	Pad
P3	SPS4607–2	[XA]	SPS4091–3	Pad
P4	SPS4613	[XA]	SPS4141	Pad
P5	SPG5301–2	[XL]	SPG5410	Carton Box
		[XA]	SPG5411	
P6	SQF12405	[XL]	SQF12407	Instruction Book
		[XA]	SQF12408	
RESISTORS				
R1	ERC12ZGK335		Deretion	—
R506 ⚠	ERG2ANJ821		ERG2ANJ271	270Ω
R507 ⚠	Addition		ERG2ANJ221	220Ω
R510 ⚠	ERDS2TJ183		ERDS2TJ223	22KΩ
R601 ⚠	ERG2ANJ222		ERG2ANJ182	1.8KΩ
R602 ⚠	ERG2ANJ182		ERG2ANJ152	1.5KΩ
CAPACITORS				
C405, 406	ECEA0JU470		ECEA1VU470	47μF
C603, 604 ⚠	ECES1JU822		ECETS56V682U	6800μF

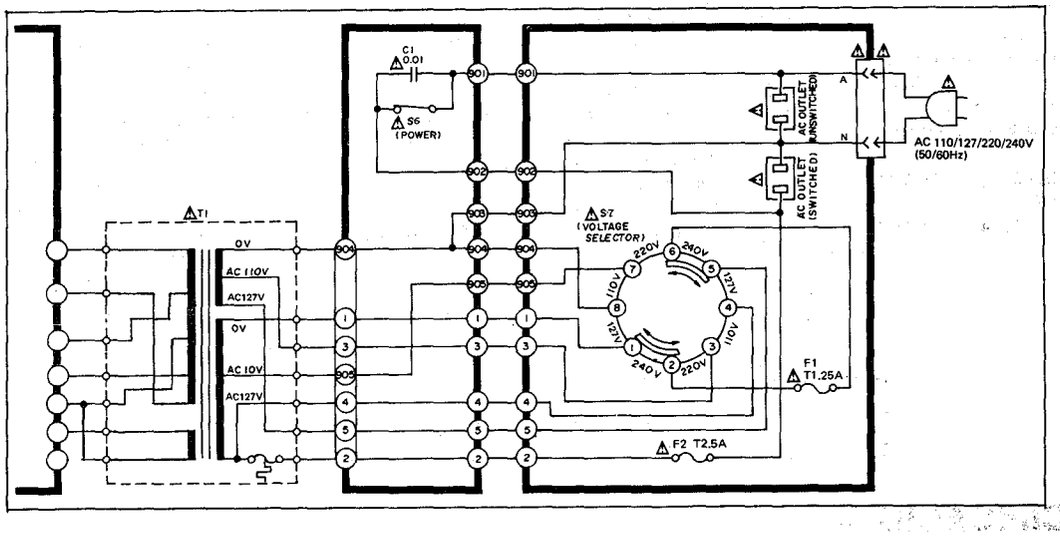
■ SCHEMATIC DIAGRAM

• Power supply circuit

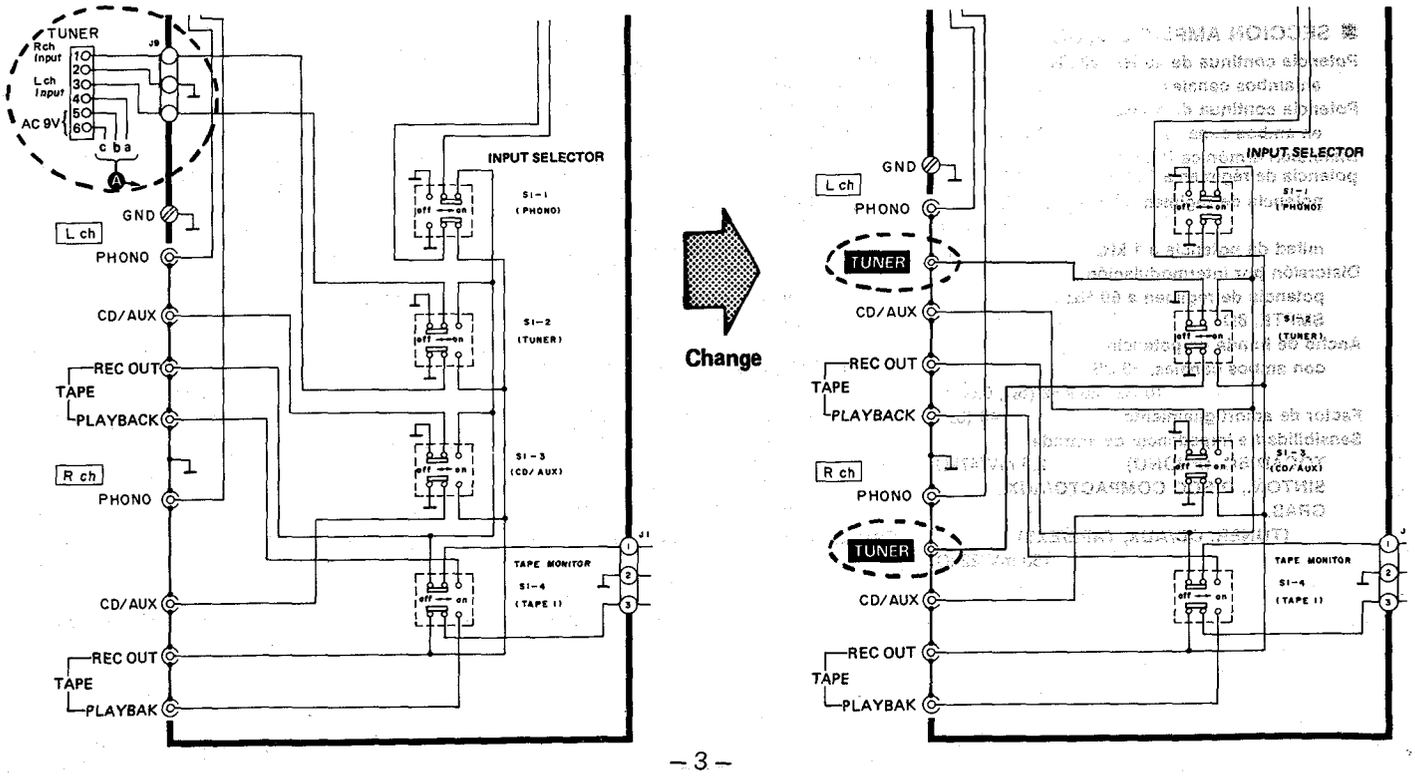
[XL] area



[XA] area



• Change in input/output terminal circuit



FRANÇAIS

■ CARACTERISTIQUES
(DIN 45 500)

■ SECTION AMPLIFICATEUR

Puissance de sortie continue de 40 Hz~20 kHz, les deux canaux en circuit 2 × 50W (8Ω)
Puissance de sortie continue à 1 kHz les deux canaux en circuit 2 × 60W (8Ω)
Distorsion harmonique totale à puissance nominale (1 kHz) 0.009% (8Ω)
à puissance nominale (40 Hz~20 kHz) 0,05% (8Ω)
à demi-puissance (1 kHz) 0,007% (8Ω)
Distorsion d'intermodulation à puissance nominale à 60 Hz: 7 kHz=4:1, SMPTE, 8Ω 0,03%
Réponse de fréquence les deux canaux en circuit, −3 dB 10 Hz~25 kHz (8Ω, 0,03%)
Coefficient d'amortissement 40 (8Ω)
Sensibilité et impédance d'entrée
PHONO 2,5 mV/47kΩ
SYNTONISATEUR, DISQUE COMPACT/ AUX, BANDE (TUNER, CD/AUX, TAPE/EXT) 150 mV/22kΩ
PHONO (tension d'entrée maximum, 1 kHz RMS) 150 mV
Signal/Bruit à puissance nominale (8Ω)
PHONO 73 dB (IHF, A: 72 dB)
SYNTONISATEUR, DISQUE COMPACT/ AUX, BANDE (TUNER, CD/AUX, TAPE/EXT) 90 dB (IHF, A: 97 dB)
Réponse de fréquence
PHONO Courbe nominale RIAA ±0,8 dB (30 Hz~15 kHz)
SYNTONISATEUR, DISQUE COMPACT/ AUX, BANDE (TUNER, CD/AUX, TAPE/EXT) 10 Hz~90 kHz (−3 dB)
Réglage de la tonalité
BASSES (BASS) 50 Hz, +10 dB~−10 dB
AIGUS (TREBLE) 20 kHz, +10 dB~−10 dB
Compensateur physiologique (volume à −30 dB) 50 Hz, +9 dB
Tension de sortie
SORTIE ENREGISTREMENT (REC OUT) 150 mV
Equilibrage des canaux, CD/AUX 250 Hz~6 300 Hz ±1,0 dB
Séparation des canaux, CD/AUX 1 kHz 55 dB
Niveau de sortie du casque et impédance 490 mV/330Ω
Impédance de charge PRINCIPALE ou AUXILIAIRE (MAIN or REMOTE) 4Ω~16Ω

■ DIVERS

Consommation 290W
Alimentation CA 50 Hz/60 Hz, 110 V/127 V/220 V/240 V
Dimensions (L×H×Pr) 430 × 86 × 240 mm
Poids 4.8 kg

Remarques:
- La Société NATIONAL-PANASONIC-FRANCE, importateur du matériel MATSUSHITA-ELECTRIC déclare que cet appareil est conforme aux prescriptions de la directive 76/889/C.E.E. (arrêté 14 Janvier 1980).
- On mesure la distorsion harmonique totale au moyen d'un analyseur de spectre digital (Système H.P. 3045).

(Sujet á changement sans prearis.)

ESPAÑOL

■ ESPECIFICACIONES
(DIN 45 500)

■ SECCION AMPLIFICADOR

Potencia continua de 40 Hz~20 kHz en ambos canales 2 × 50W (8Ω)
Potencia continua de 1 kHz en ambos canales 2 × 60W (8Ω)
Distorsión armónica total potencia de régimen a 1 kHz 0.009% (8Ω)
potencia de régimen a 40 Hz~20 kHz 0,05% (8Ω)
mitad de potencia a 1 kHz 0,007% (8Ω)
Distorsión por intermodulación potencia de régimen a 60 Hz: 7 kHz=4:1, SMPTE, 8Ω 0,03%
Ancho de banda de potencia con ambos canales, −3 dB 10 Hz~25 kHz (8Ω, 0,03%)
Factor de amortiguamiento 40 (8Ω)
Sensibilidad e impedancia de entrada
TOCADISC. (PHONO) 2,5 mV/47kΩ
SINTON., DISCO COMPACTO/AUX., GRAB. (TUNER, CD/AUX, TAPE/EXT) 150 mV/22kΩ
Voltaje máximo de entrada de PHONO (1 kHz, RMS) 150 mV
Relación de señal a ruido potencia de régimen (8Ω)
TOCADISC. (PHONO) 73 dB (IHF, A: 72 dB)
SINTON., DISCO COMPACTO/AUX., GRAB. (TUNER, CD/AUX, TAPE/EXT) 90 dB (IHF, A: 97 dB)
Respuesta de frecuencia
TOCADISC. (PHONO) curva RIAA estándar ±0,8 dB (30 Hz~15 kHz)
SINTON., DISCO COMPACTO/AUX., GRAB. (TUNER, CD/AUX, TAPE/EXT) 10 Hz~90 kHz (−3 dB)
Controles de tono
BAJOS (BASS) 50 Hz, +10 dB~−10 dB
AGUDOS (TREBLE) 20 kHz, +10 dB~−10 dB
Control de sonoridad (volumen a −30 dB) 50 Hz, +9 dB
Voltaje de salida SAL. GRAB. (REC OUT) 150 mV
Equilibrio de canales, CD/AUX 250 Hz~6 300 Hz ±1,0 dB
Separación de canales, CD/AUX 1 kHz 55 dB
Impedancia y nivel de salida de los auriculares 490 mV/330Ω
Impedancia de carga MAIN o REMOTE 4Ω~16Ω

■ GENERAL

Consumo de energía 290W
Alimentación de energía CA 50 Hz/60 Hz, 110 V/127 V/220 V/240 V
Dimensiones (An.×Al.×Prof.) 430 × 86 × 240 mm
Peso 4.8 kg

Nota:
La distorsión armónica total se mide con el analizador de espectro digital (sistema H.P. 3045).

(Estas especificaciones están sujetas a cualquier cambio sin previo eviso.)

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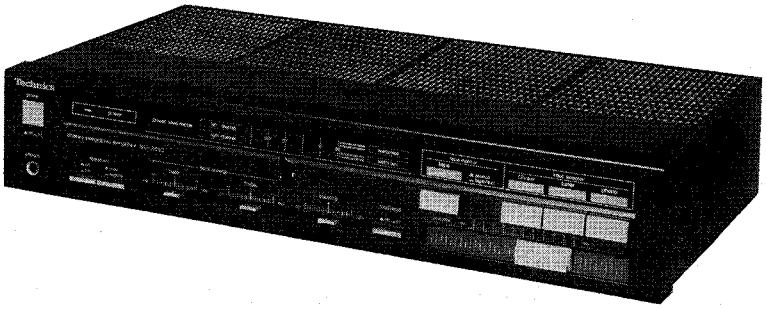
ORDER NO. HAD85042524C1
A2

Service Manual

Stereo Integrated Amplifier

Amplifier

SU-Z550



Color

(K) . . . . Black Type

Color	Area
(K)	[M] . . . . U.S.A.
(K)	[MC] . . . Canada

System

SC-D110

SPECIFICATIONS

(IHF '78)

■ AMPLIFIER SECTION

Rated minimum sine wave RMS power output
20 Hz~20 kHz both channels driven
0.5% total harmonic distortion

70 W per channel (8 ohms)

1 kHz continuous power output both channels driven	
0.5% total harmonic distortion	73 W per channel (8 ohms)
Dynamic headroom	1 dB (8 ohms)
Total harmonic distortion	
half power at 1 kHz	0.02% (8 ohms)
SMPTE intermodulation distortion	0.5% (8 ohms)
Frequency response	
PHONO	RIAA standard curve ±0.8 dB
TUNER, CD/AUX, TAPE/EXT	10 Hz~100 kHz, −3 dB
Input sensitivity	
PHONO	0.35 mV (2.5 mV, IHF '66)
TUNER, CD/AUX, TAPE/EXT	19 mV (150 mV, IHF '66)
S/N (IHF, A)	
PHONO	76 dB (72dB, IHF '66)
TUNER, CD/AUX, TAPE/EXT	80 dB (97 dB, IHF '66)
Maximum input voltage	
PHONO	150 mV (150 mV, 1 kHz)
Input impedance	
PHONO	47 kilohms
TUNER, CD/AUX, TAPE/EXT	22 kilohms
Tone controls	
BASS	50 Hz, +10 dB~−10 dB
TREBLE	20 kHz, +10 dB~−10 dB
Loudness control (volume at −30 dB)	50 Hz, +9 dB
Output voltage	
TAPE/EXT (REC OUT)	150 mV
Low frequency damping factor	30 (8 ohms)
Load impedance	
MAIN or REMOTE	8~16 ohms

■ GENERAL

Power consumption	260 W, 330 VA
Power supply	AC 120V, 60 Hz
Dimensions (W×H×D)	430 × 86 × 240 mm (16-15/16" × 3-3/8" × 9-7/16")
Weight	5.0 kg (11 lb.)

Note:
Total harmonic distortion is measured by the digital spectrum analyzer (H.P. 3045 system).

Specifications are subject to change without notice for further improvement.

Technics

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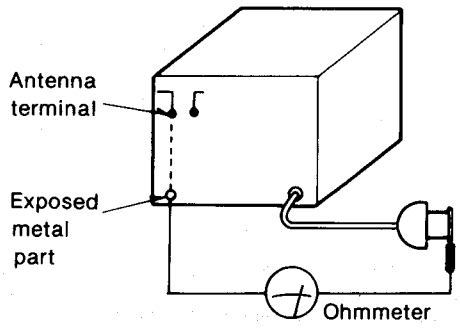
SAFETY PRECAUTIONS

1. Before servicing, unplug the power cord to prevent an electric shock.
2. When replacing parts, use only manufacturer's recommended components for safety.
3. Check the condition of the power cord. Replace if wear or damage is evident.
4. After servicing, be sure to restore the lead dress, insulation barriers, insulation papers, shields, etc.
5. Before returning the serviced equipment to the customer, be sure to make the following insulation resistance test to prevent the customer from being exposed to a shock hazard.

• INSULATION RESISTANCE TEST

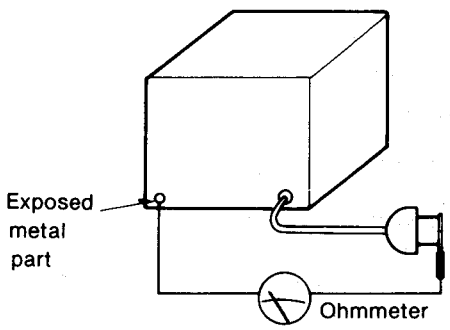
1. Unplug the power cord and short the two prongs of the plug with a jumper wire.
2. Turn on the power switch.
3. Measure the resistance value with ohmmeter between the jumpered AC plug and each exposed metal cabinet part, such as screwheads antenna, control shafts, handle brackets, etc. Equipment with antenna terminals should read between 3MΩ and 5.2MΩ to all exposed parts. (Fig. A) Equipment without antenna terminals should read approximately infinity to all exposed parts. (Fig. B)

Note: Some exposed parts may be isolated from the chassis by design. These will read infinity.



(Fig. A)

Resistance = 3MΩ—5.2MΩ



(Fig. B)

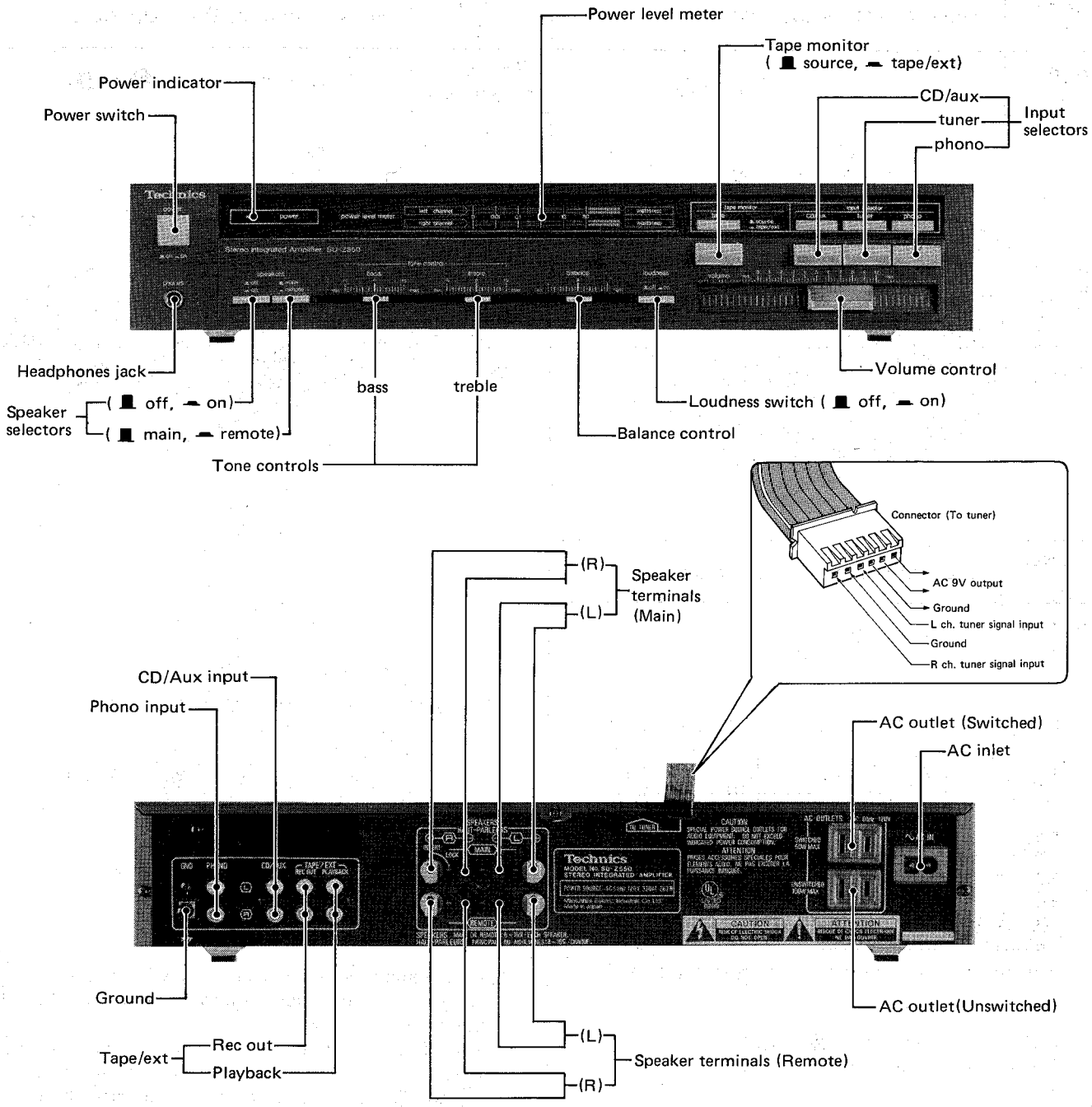
Resistance = Approx ∞

4. If the measurement is outside the specified limits, there is a possibility of a shock hazard. The equipment should be repaired and rechecked before it is returned to the customer.

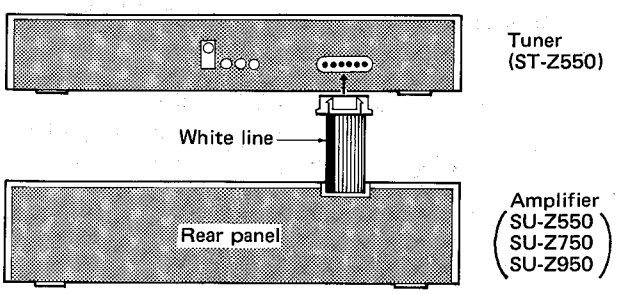
LINE-UP OF COMPONENTS

	SC-D130E	SC-D120E	SC-D110
Stereo Integrated Amplifier	SU-Z950	SU-Z750	**SU-Z550**
Quartz Synthesizer FM/AM Stereo Tuner	ST-Z550	ST-Z550	ST-Z550
Automatic Turntable System	SL-D250U	SL-B250U	SL-B250U
Stereo Double Cassette Deck	RS-D550W	RS-D550W	RS-D550W
Stereo Graphic Equalizer	SH-Z250	SH-Z250	———
Hi-Fi Speaker Systems	SB-2580	SB-2560	SB-2520

■ LOCATION OF CONTROLS



● Phono input capacitance is about 150pF.

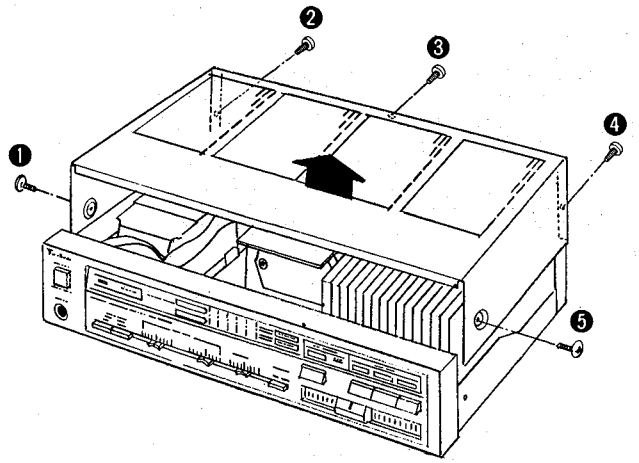


Connect the amplifier and tuner as illustrated.

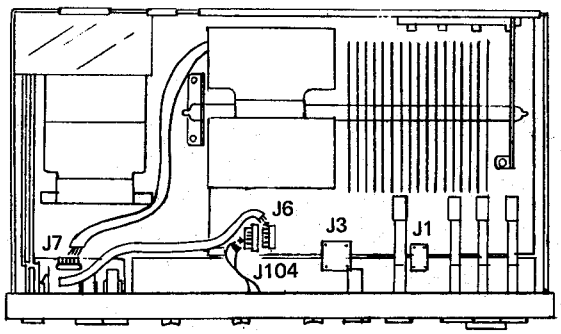
* Tuner (ST-Z550) is not equipped with power supply. So, the amplifier shown on separate power supply is necessary for the repair and check of this tuner. (Refer to Service Manual of ST-Z550.)

■ DISASSEMBLY INSTRUCTIONS

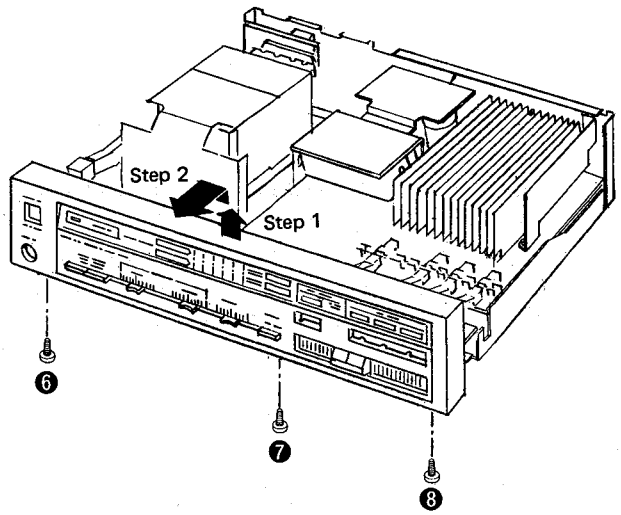
Ref. No. 1	How to remove the cabinet
Procedure 1	1. Remove the 5 screws. (❶ ~ ❺)



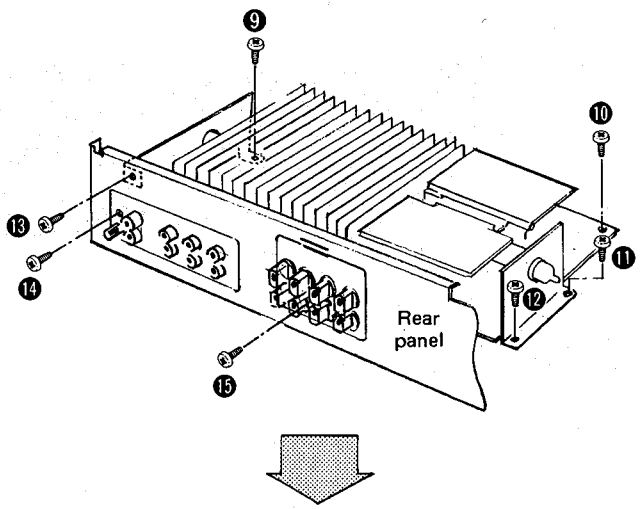
Ref. No. 2	How to remove the front panel
Procedure 1 →2	1. Remove the connector. (J1, J3, J6, J7 and J104)

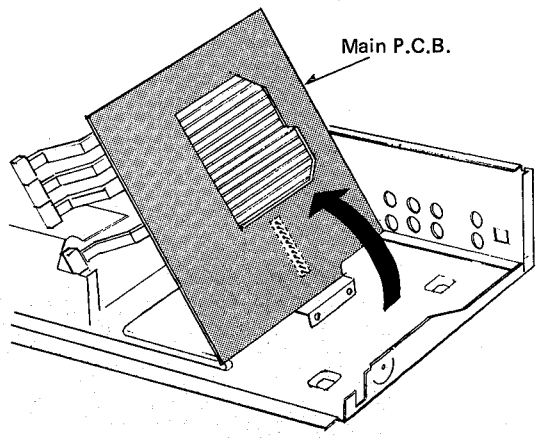


2. Remove the 3 screws. (❻ ~ ❽)
3. Remove the front panel.

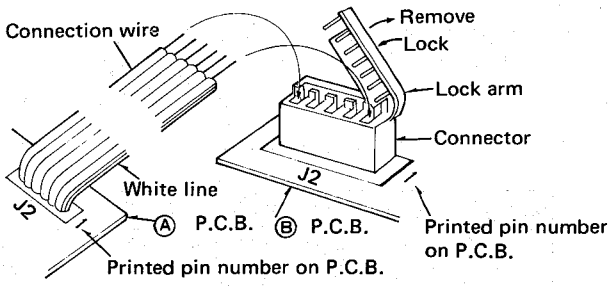


Ref. No. 3	How to remove the main P.C.B.
Procedure 1 →2 →3	1. Remove the 7 screws. (❾ ~ ⓯)



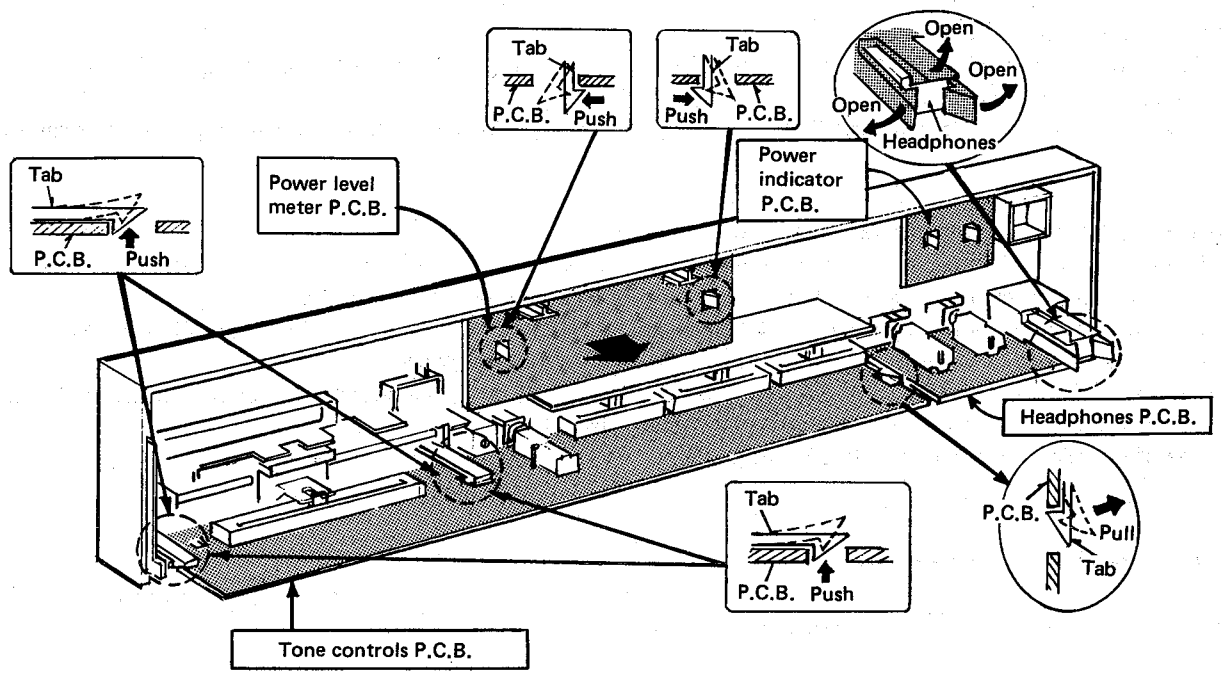


1. When removing the flat connection wire from the connector, open the lock arm as illustrated and then pull the wire.
2. When fitting the wire to the connector, connect it to the same J number (same connector) printed on the Ⓐ and Ⓑ P.C.B. as illustrated. In this case, check the pin number printed on the Ⓐ and Ⓑ P.C.B. and then insert the wire in the same direction. (Insert the white line printed side of flat connection wire into the pin number 1.)



Ref. No. 4	How to remove the other P.C.B.
Procedure	

- For the repair of each P.C.B. attached to the front panel or replacement of knobs, remove the P.C.B. by pushing or releasing each tab as illustrated.



■ PROTECTION CIRCUITRY

The protection circuitry may have operated if either of the following conditions is noticed:

- No sound is heard when the power is turned on.
- Sound stops during a performance.

The function of this circuitry is to prevent circuitry damage if, for example, the positive and negative speaker connection wires are "shorted", or if speaker systems with an impedance less than the indicated rated impedance of this unit are used.

If this occurs, follow the procedure outlines below:

1. Turn off the power.
2. Determine the cause of the problem and correct it.
3. Turn on the power once again after one minute.

Note

When the protection circuitry functions, the unit will not operate unless the power is first turned off and then on again.

■ BEFORE REPAIR

1. Turn off the power supply and short-circuit of power supply capacitors (C603 and C604, 8200μF) at resistance (about 10Ω, 5W) in order to discharge the charged voltage. Do not short between C603 and C604 by screwdriver. It may damage the component.
2. Before turning on the power supply after completion of repair, slowly apply the primary voltage by using a power supply voltage controller to make sure that the consumed current at 120V, 60Hz in no-signal mode is 227 ~ 463mA.

■ TECHNICAL INFORMATION

• Muting operation with power ON

1. When power is turned ON, AC voltage is applied to No. ④ pin of IC501.
2. Next, the time constant setting capacitor (C503) connected to No. ⑤ pin begins to be charged.
3. When the voltage reaches about −2V (3 seconds after power ON), the muting circuit turns ON, and then −14.5V voltage is output to No. ⑧ pin.
4. When minus voltage is output to No. ⑧ pin, Q501 turns ON causing speaker protecting relay to turn ON. (Speaker terminal is connected to power amplifier.)

• Muting operation with power OFF

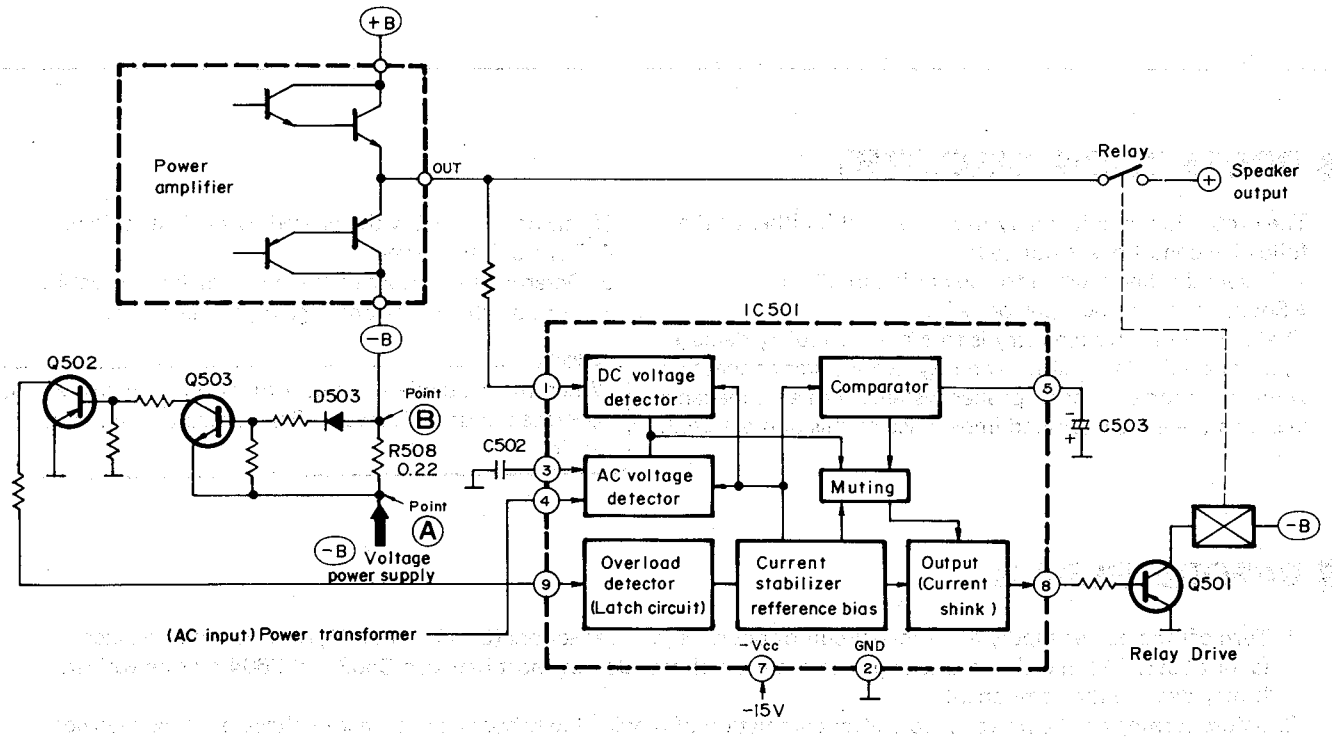
1. When power is turned OFF, the time constant setting capacitor (C502) connected to No. ③ pin is discharged, then AC detection circuit operates to turn the muting circuit OFF.
2. When the muting circuit is turned OFF, the voltage of No. ⑧ pin becomes 0V and speaker protecting relay turns OFF.

• Muting operation during power amplifier overload

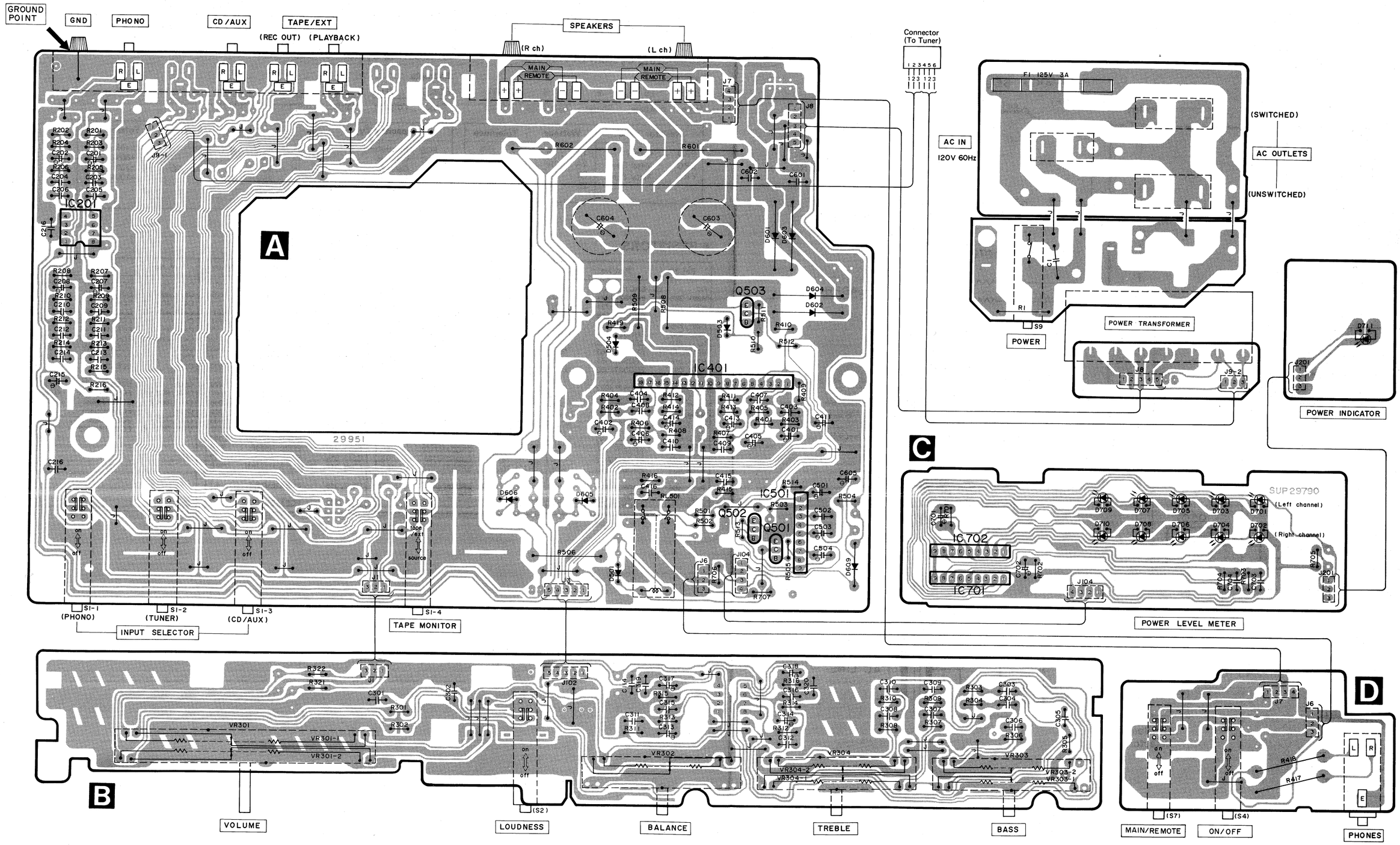
1. If power amplifier is operated with the speaker terminals short-circuited or by using a speaker whose impedance is less than the rating, then a large current will flow into the power amplifier through R508.
2. When the voltage of point Ⓑ is about 1.4V higher than that of point Ⓐ, then Q503 and Q502 turn ON.
3. With Q502 turned ON, the voltage of IC501 No. ⑨ pin becomes nearly 0V.
4. Usually, IC501 No. ⑨ pin and No. ⑦ pin are equal in potential, but if the potential difference exceeds 0.6V, the latch circuit will function and then no voltage is generated at No. ⑧ pin.
5. Therefore, relay drive transistor (Q501) turns ON.

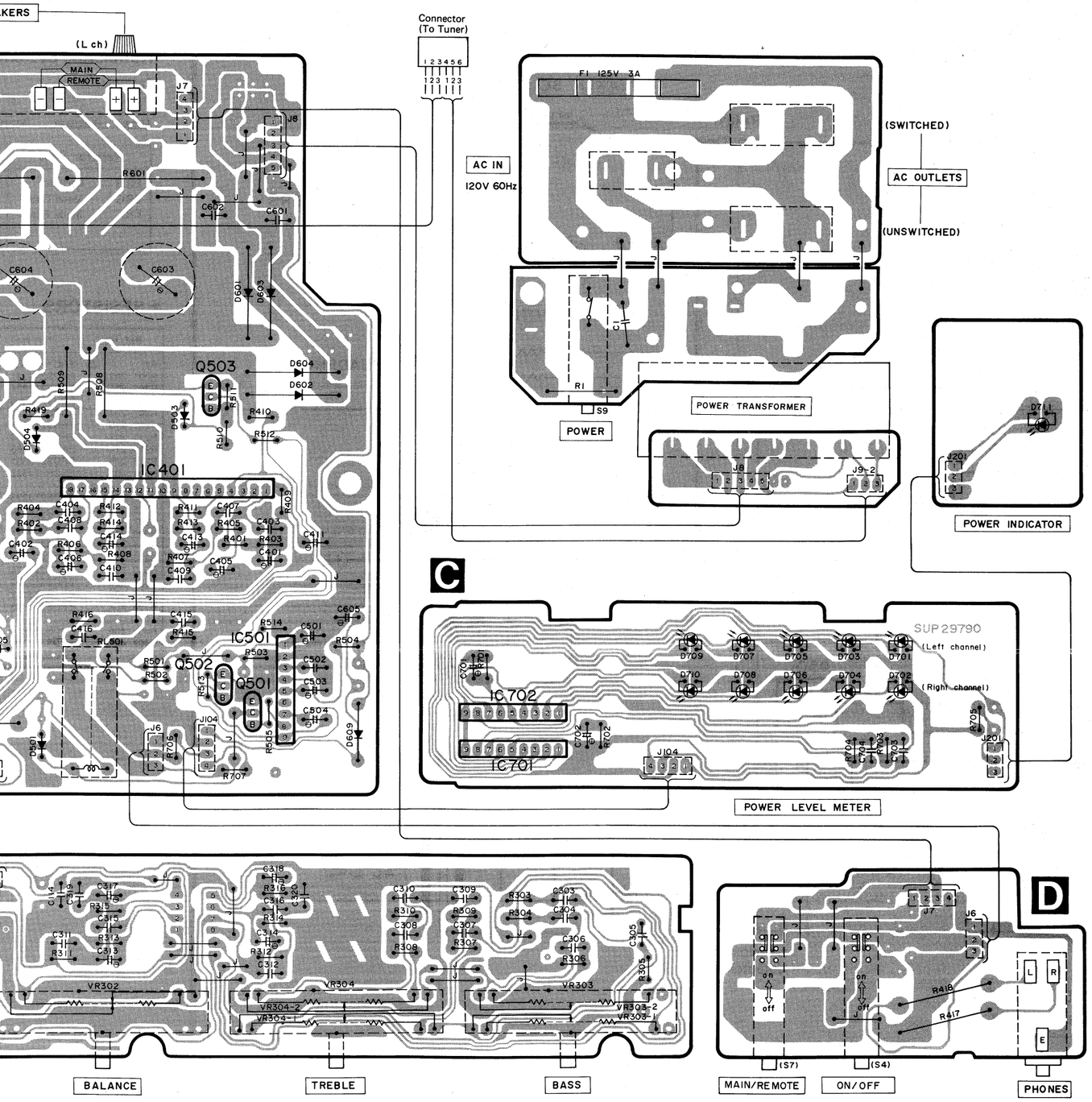
• Operation of DC detection circuit

If a plus or minus DC voltage comes out of power amplifier, then the DC detection circuit operates, the muting circuit turns OFF and the speaker protecting relay also turns OFF.



■ CIRCUIT BOARD AND WIRING CONNECTION DIAGRAM

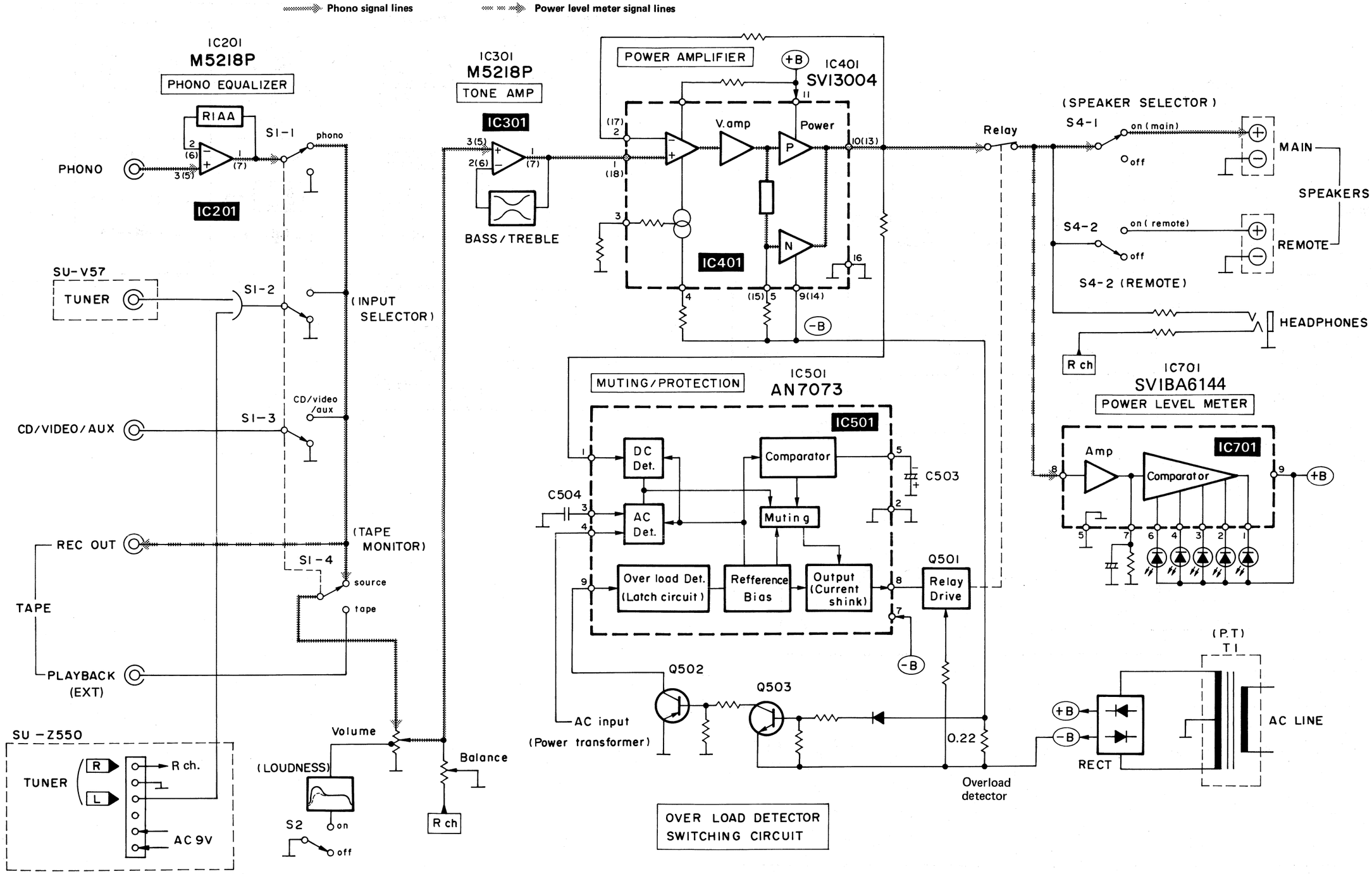




■ TERMINAL GUIDE OF IC, TRANSISTORS AND DIODES

2SC1845, 2SA1015 2SA992	SVIM5218P	SVI3004	AN7073
SVIBA6144	SVDS3V20 SVDSR1K2	MA4150	MA165
LN846RP	LN463YCPPU		

■ BLOCK DIAGRAM



■ RESIS

Notes: 1. Part
Plea
2. Imp
Com
impo
use

Numbering

Example

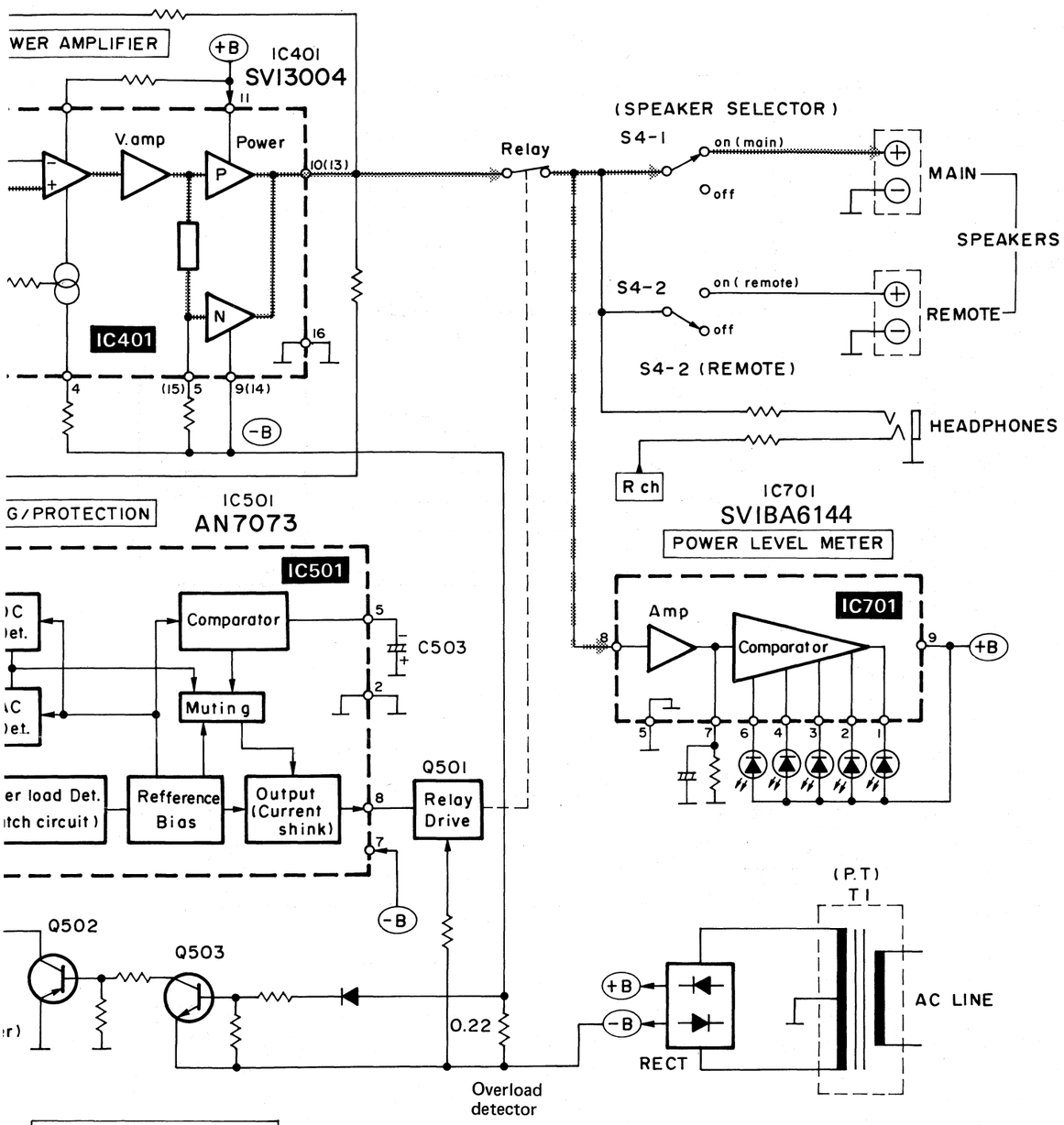
ERD	25
Type	Wattag

Resistor T	
ERD	: Carb
ERG	: Met
ERX	: Met

● RESISTOR

Ref. No.	
R1	△ ER
R201, 202	ER
R203, 204	ER
R205, 206	ER
R207, 208	ER
R209, 210	ER
R211, 212	ER
R213, 214	ER
R215, 216	ER
R301, 302	ER
R303, 304	ER
R305, 306	ER
R307, 308	ER
R309, 310	ER
R311, 312	ER
R313, 314	ER
R315, 316	ER
R321, 322	ER
R401, 402	ER
R403, 404	ER
R405, 406	ER
R407, 408	ER
R409	ER

al lines



OVER LOAD DETECTOR
SWITCHING CIRCUIT

■ RESISTORS & CAPACITORS

Notes:
1. Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.
2. Important safety notice: Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.
3. The "Ⓢ" mark is service standard parts and may differ from production parts.
4. The unit of resistance is Ω(ohm), K = 1000Ω, M = 1000kΩ.
5. The unit of capacitance is μF (microfarad). P = 10^{-6} μF
6. Bracketed indications in Ref. No. columns specify the area. Parts without these indications can be used for all areas.

Numbering System of Resistor

Example

ERD	25	F	J	101
Type	Wattage	Shape	Tolerance	Value

Resistor Type	Wattage	Tolerance
ERD : Carbon ERG : Metal Oxide ERX : Metal Film	1A : 1W 2A : 2W S2 : 1/4W 25 : 1/4W	J : ±5%

Numbering System of Capacitor

Example

ECKD	1H	102	Z	F
Type	Volgage	Value	Tolerance	Peculiarity

Capacitor Type	Voltage	Tolerance
ECE : Electrolytic ECC : Ceramic ECK : Ceramic ECF : Semi-conductor ECQ : Polyester	0J : 6.3V 56V : 56V 1A : 10V 1J : 63V 1C : 16V KC : 400V AC 1E : 25V D : 25V 1H : 50V	K : ±10% Z : +80%, –20% M : ±20% P : +100%, –0%

● RESISTORS

Ref. No.	Part No.	Value
R1 ⚠	ERC12ZGK335	3.3M
R201, 202	ERDS2TJ391	390
R203, 204	ERDS2TJ224	220K
R205, 206	ERDS2TJ563	56K
R207, 208	ERDS2TJ271	270
R209, 210	ERDS2TJ184	180K
R211, 212	ERDS2TJ123	12K
R213, 214	ERDS2TJ563	56K
R215, 216	ERDS2TJ561	560
R301, 302	ERDS2TJ562	5.6K
R303, 304	ERDS2TJ223	22K
R305, 306	ERDS2TJ392	3.9K
R307, 308	ERDS2TJ182	1.8K
R309, 310	ERDS2TJ821	820
R311, 312	ERDS2TJ474	470K
R313, 314	ERDS2TJ563	56K
R315, 316	ERDS2TJ474	470K
R321, 322	ERDS2TJ332	3.3K
R401, 402	ERDS2TJ102	1K
R403, 404	ERDS2TJ223	22K
R405, 406	ERDS2TJ821	820
R407, 408	ERDS2TJ223	22K
R409	ERDS2TJ273	27K

Ref. No.	Part No.	Value
R410 ⚠Ⓢ	ERD25FJ271	270
R411, 412	ERDS2TJ103	10K
R413, 414 ⚠	ERDS2TJ103	10K
R415, 416 Ⓢ	ERD25FJ100	10
R417, 418 Ⓢ	ERG2ANJ331	330
R419 ⚠Ⓢ	ERD25FJ331	330
R501, 502	ERDS2TJ333	33K
R503	ERDS2TJ103	10K
R504	ERDS2TJ124	120K
R505	ERDS2TJ223	22K
R506 ⚠Ⓢ	ERG2ANJ821	820
R508, 509 Ⓢ	ERX1ANJR22	0.22
R510	ERDS2TJ183	18K
R511	ERDS2TJ153	15K
R512	ERDS2TJ473	47K
R513, 514	ERDS2TJ153	15K
R601 ⚠Ⓢ	ERG2ANJ222	2.2K
R602 ⚠Ⓢ	ERG2ANJ182	1.8K
R701, 702	ERDS2TJ103	10K
R703, 704	ERDS2TJ103	10K
R705 Ⓢ	ERD25FJ471	470
R706, 707	ERDS2TJ334	330K

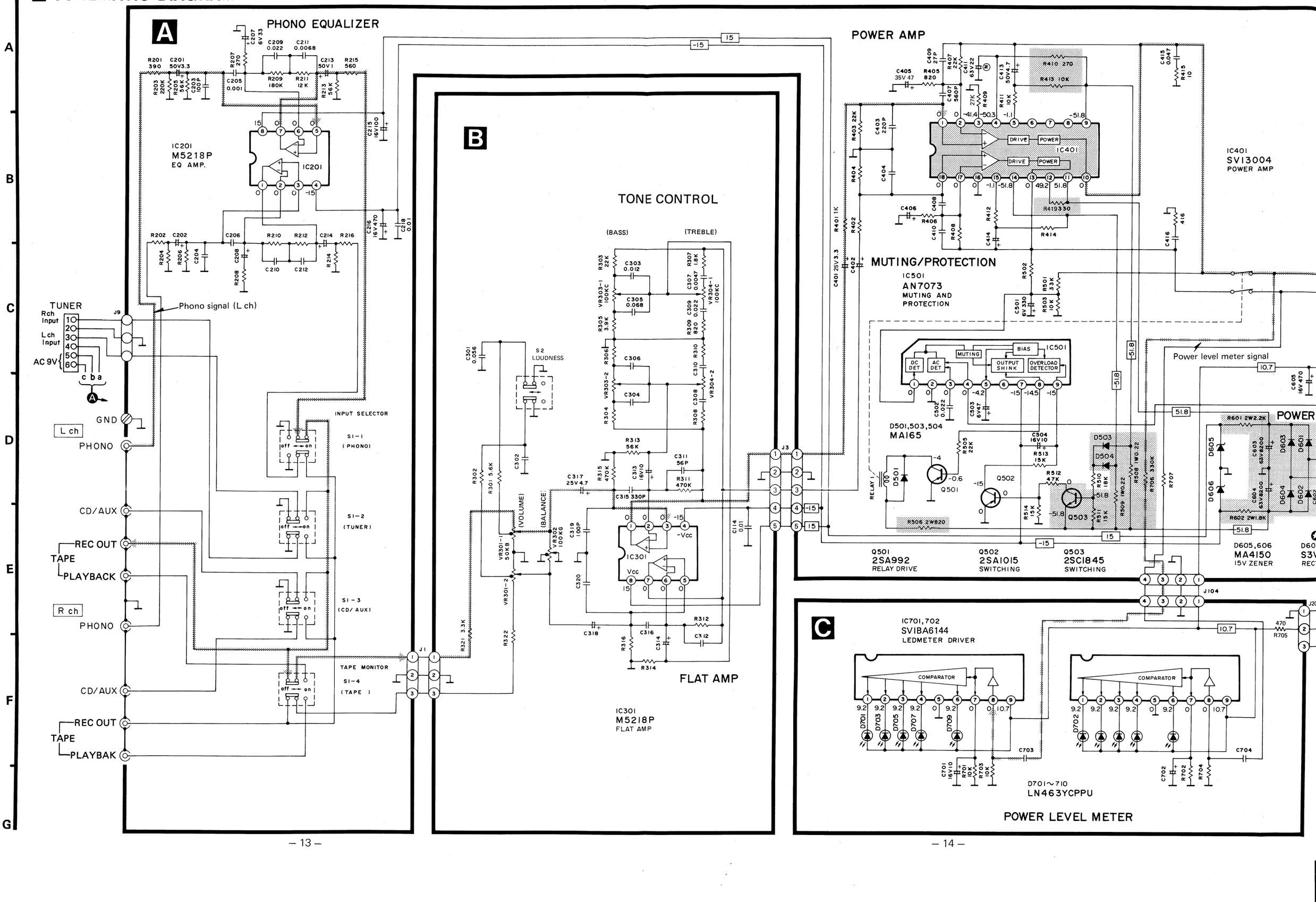
● CAPACITORS

Ref. No.	Part No.	Value
C1 ⚠	ECKDKC103PF2	0.01
C114 Ⓢ	ECKD1H103ZF	0.01
C201, 202	ECEA1HKS3R3	3.3
C203, 204 Ⓢ	ECCD1H101K	100P
C205, 206 Ⓢ	ECKD1H102KB	0.001
C207, 208	ECEA0JU330	33
C209, 210	ECFTD223KXL	0.022
C211, 212	ECFTD682KXL	0.0068
C213, 214	ECEA1HN010	1
C215	ECEA1CU101	100
C216	ECEA1CU471	470
C218 Ⓢ	ECKD1H103ZF	0.01
C301, 302	ECFTD563KXL	0.056
C303, 304	ECFTD123KXL	0.012
C305, 306	ECFTD683KXL	0.068
C307, 308	ECFTD472KXL	0.0047
C309, 310	ECFTD223KXL	0.022
C311, 312 Ⓢ	ECCD1H560K	56P
C313, 314	ECEA1CU100	10
C315, 316 Ⓢ	ECKD1H331KB	330P
C317, 318	ECEA1EU4R7	4.7
C319, 320 Ⓢ	ECCD1H101K	100P
C401, 402	ECEA1EU3R3	3.3

Ref. No.	Part No.	Value
C403, 404 Ⓢ	ECCD1H221K	220P
C405, 406	ECEA0JU470	47
C407, 408 Ⓢ	ECKD1H561KB	560P
C409, 410 Ⓢ	ECCD1H270K	27P
C411	ECEA1JN220SE	22
C413, 414	ECEA1HKS4R7	4.7
C415, 416 Ⓢ	ECKD1H473ZF	0.047
C501	ECEA0JU331	330
C502	ECFTD223KXL	0.022
C503	ECEA0JU470	47
C504	ECEA1CU100	10
C601, 602 ⚠Ⓢ	ECKD1H223ZF	0.022
C603, 604 ⚠	ECES1JU822	8200
C605	ECEA1CU471	470
C701, 702	ECEA1CKS100	10
C703, 704 Ⓢ	ECKD1H103ZF	0.01

SCHEMATIC DIAGRAM

(This schematic diagram may be modified at any time with the development of new technology.)



ent of new technology.)

POWER AMP

IC401
SV13004
POWER AMP

MUTING/PROTECTION

IC501
AN7073
MUTING AND
PROTECTION

TONE CONTROL

FLAT AMP

IC301
M5218P
FLAT AMP

POWER SUPPLY

D609
SRIK2
RECT

D605,606
MA4150
15V ZENER

D601~604
S3V20
RECT

D501,503,504
MA165

Q501
2SA992
RELAY DRIVE

Q502
2SA1015
SWITCHING

Q503
2SC1845
SWITCHING

IC701,702
SVIBA6144
LEDMETER DRIVER

D701~710
LN463YCPPU

D711
LN846RP
POWER IND.

POWER LEVEL METER

L ch
MAIN
R ch
SPEAKERS
L ch
REMOTE
R ch

S7
(MAIN/REMOTE)
MAIN — REMOTE

S4
(ON/OFF)
off — on

HEADPHONES

AC 120V
60 Hz

* The part No. of transistors, IC and diodes mentioned in the schematic diagram stand for production part No. Regarding the part No. with ✪ mark, the production part No. are different from the replacement part No. Therefore, when placing an order for replacement part please use the part No. in the replacement part list.

FUSE CAUTION

This symbol located near the fuse indicates that the fuse used is fast operating type. For continued protection against fire hazard, replace with same type fuse. For fuse rating, refer to the marting adjacent to the symbol.

Ce symbol indique que le fusible utilisé est à rapide. Pour une protection permanente, n' utiliser que des fusibles de même type. Ce dernier est indiqué là qù le présent symbol est apposé.

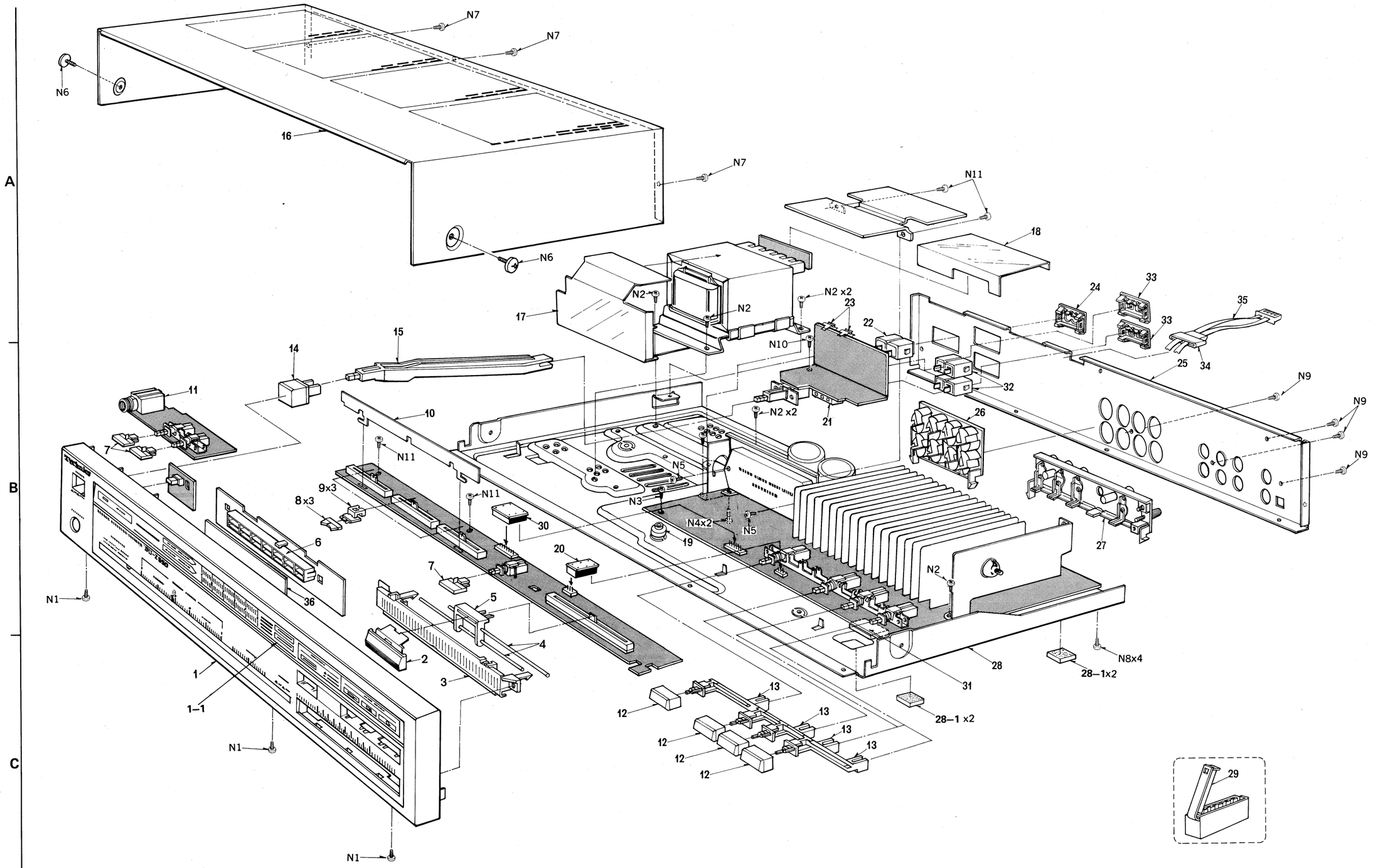
Note:

1. **S1-1 ~ S1-3** : Input selector switch in "**phono**" position. S1-1: (phono) S1-2: (tuner) S1-3: (CD/aux)
2. **S1-4** : Tape moniter (TAPE 1) switch in "**source**" position. (source ↔ tape/ext)
3. **S2** : Loudness on/off switch in "**off**" position.
4. **S4** : Speaker on/off switch in **"on"** position.
5. **S6** : Power switch in "**on**" position.
6. **S7** : Speaker selectors switch in **"main"** position.
7. Indicated voltage values are the standard values for the unit measured by the DC electronic circuit tester (high-impedance) with the ground point taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.
8. Phono signal (Lch)
9. Positive (+B) voltage lines or Negative (—B) voltage lines.
10. Power level metre signal line (L ch)

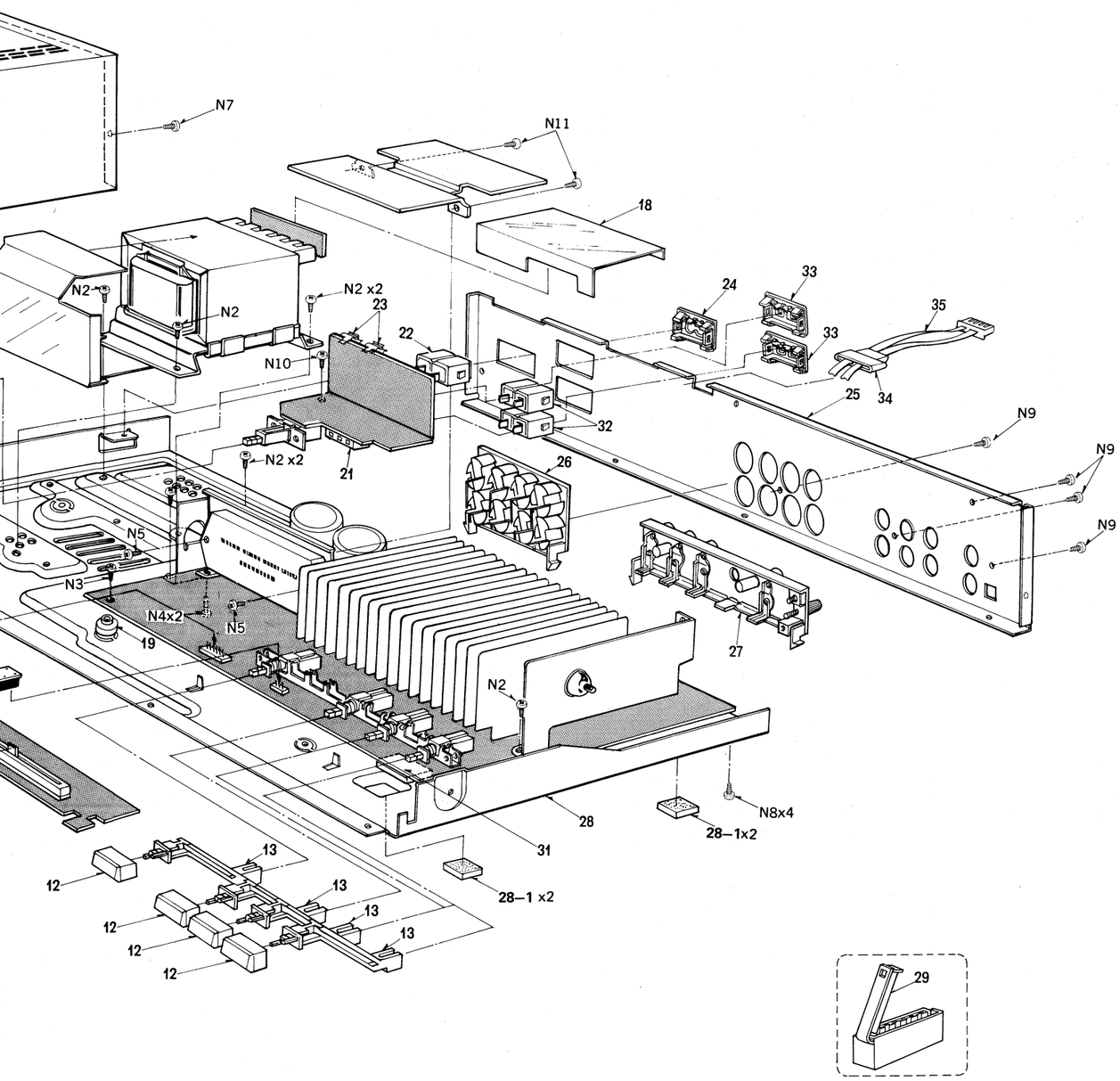
IMPORTANT SAFETY NOTICE

The shaded areas on this schematic diagram incorporates special features important for protection from fire and electrical shock hazards.
When servicing, it is essential that only manufacturer's specified parts be used for the critical components in the shaded areas of the schematic.

■ EXPLODED VIEW



| | | |



													23	22				18		24		33	33		35
											19				21				26	32		27		25	34
12		12	12	12					13		13	13	13			28–1	31	28			28–1				29

■ REPLACEMENT PARTS LIST

Notes:

1. Part numbers are indicated on most mechanical parts. Please use this part number for parts order.
2. Important safety notice: Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
3. Bracketed indications in Ref. No. columns specify the area. Parts without these indications can be used for all areas.
4. The " Ⓢ " mark is service standard parts and may differ from production parts.
5. The parenthesized numbers in the column of description stand for the quantity per set.

Ref. No.		Part No.	Description
INTEGRATED CIRCUITS			
IC201, 301		M5218P	Integrated Circuit
IC401	⚠	SVI3004	Integrated Circuit
IC501		AN7073	Integrated Circuit
IC701, 702		SVIBA6144	Integrated Circuit
TRANSISTORS			
Q501		2SA992−E	Transistor
Q502		2SA1015Y	Transistor
Q503		2SC1845−E	Transistor
DIODES			
D501, 503, 504		MA165	Diode
D601~604	⚠	SVDS3V20	Diode
D605, 606		MA4150M	Diode
D609		SVDSR1K2	Diode
D701~710		LN463YCPPU	LED
D711		LN846RP	LED
TRANSFORMER			
T1	⚠	SLT5M445	Power Source
VARIABLE RESISTORS			
VR301		EWAQA8X05B54	Main, 50kΩ (B)
VR302		EWANF5X05G15	Balance, 100kΩ (G)
VR303, 304		EWANA6X05C15	Tone, 100kΩ (C)
FUSE			
F1	⚠	XBA1F30NU14	125V, 3A
SWITCHES			
S1		SSH488	Selector
S2		SSH1159	Loudness
S3, 4		SSH1193	Speaker
S6	⚠	SSH1071	Power Source
RELAY			
RLAY501		SSY129	Relay

Ref. No.		Part No.	Description	
CABINET and CHASSIS PARTS				
1		SGYUZ550−KM	Front Panel Ass'y	(1)
1-1		SDU272I	Filter	(1)
2		SXE1108	Knob, Volume	(1)
3		SGXUZ150−KE	Ornament	(1)
4		SUH609	Shaft, Slider	(2)
5		SHR9765	Slider	(1)
6		SMP391−1	Holder, LED	(1)
7		SBC723−2	Button	(3)
8		SBD97	Knob, Volume	(3)
9		SHR9764−3	Slider	(3)
10		SHR5299−6	Volume Cover	(1)
11		SJJ126B	Jack, Headphone	(1)
12		SBC722	Button Input	(4)
13		SUB228	Connectioin Rod, Input Selector	(4)
14		SBC666	Button, Power Switch	(1)
15		SUB227	Connection Rod, Power Switch	(1)
16		SKC1550BB1	Cabinet	(1)
17		SMC1195−1	Shield Plate	(1)
18		SMX879	Shield Plate	(1)
19		SHE185	Spacer	(1)
20		SJS304	Socket	(1)
21		SJS305	Socket	(1)
22 [M]	⚠	SJS9231B	Socket, AC Inlet	(1)
22 [MC]	⚠	SJS9234B	Socket, AC Inlet	(1)
23		SJT389	Holder Fuse	(2)
24 [M]		SJS9231A	AC Inlet Cover	(1)
24 [MC]		SJS9234A	AC Inlet Cover	(1)
25		SGP6590−4A	Rear Panel	(1)
26		SJF4818	Terminal Board (Speaker)	(1)
27		SJF3062−5N	Terminal Board	(1)
28		SKUUZ450−SE	Bottom Board Ass'y	(1)
28-1		SKL293	Foot	(4)
29		SJS5327	Connector (3 Pin)	(1)
29		SJS5421	Connector (4 Pin)	(1)
30		SJS701	Socket	(1)
31		SHG6373	Soundproof Rubber	(1)

Ref. No.		Part No.	Description	
CABINET and CHASSIS PARTS				
32 [M]	⚠	SJS9232B	Socket, AC Outlet	(2)
32 [MC]	⚠	SJS9233B	Socket, AC Outlet	(2)
33 [M]		SJS9232A	AC Outlet Cover	(2)
33 [MC]		SJS9233A	AC Outlet Cover	(2)
34		SGE1763	Spacer	(1)
35		SWKUZ550−KM	Connector	(1)
36		SDU279	Filter	(1)
SCREWS				
N1		XTB3+8GFZ	Tapping, ⊕3×8	(3)
N2		XTB3+6FFZ	Tapping, ⊕3×6	(7)
N3		XTW3+15T	Tapping with Washer, ⊕3×15	(1)
N4		XTW3+8T	Tapping with Washer, ⊕3×8	(2)
N5		XTB3+16J	Tapping, ⊕3×16	(2)
N6		SNE2095−5	Cabinet	(2)
N7		XTBS3+8BFZ1	Tapping, ⊕3×8	(3)
N8		XTBS3+6FFZ1	Tapping, ⊕3×6	(4)
N9		XTBS3+8JFZ1	Tapping, ⊕3×8	(4)
N10		XTW3+8L	Tapping with Washer, ⊕3×8	(1)
N11		XTB3+8G	Tapping, ⊕3×8	(2)
ACCESSORIES				
A1 [M]	⚠	SJA170	AC Cord	(1)
A1 [MC]	⚠	SJA172	AC Cord	(1)
PACKING PARTS				
P1		SPP735	Polyethylene Bag	(1)
P2		SPS4606−2	Pad, Left Side	(1)
P3		SPS4607−2	Pad, Right Side	(1)
P4		SPS4613	Pad, Upper	(1)
P5		SPG5301−2	Carton Box	(1)
P6 [M]		SQF12405	Instruction Book	(1)
P6 [MC]		SQF12406	Instruction Book	(1)

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